

RECEIVED

JUL 22 2002

WS-SO

**FINDING OF NO SIGNIFICANT IMPACT
AND
DECISION
FOR
ENVIRONMENTAL ASSESSMENT
ORAL VACCINATION TO CONTROL
SPECIFIC RABIES VIRUS VARIANTS
IN RACCOONS, GRAY FOXES, AND COYOTES
IN THE UNITED STATES**

The U.S. Department of Agriculture (USDA), Animal and Plant Health Inspection Service, Wildlife Services (APHIS-WS) program completed an environmental assessment (EA) and Decision/Finding of No Significant Impact (FONSI) on July 30, 2001 (66 FR 45835-45836, August 30, 2001) that analyses the potential environmental effects of a proposal to continue and expand the involvement of APHIS-WS in cooperative oral rabies vaccination (ORV) programs in a number of states. Since that time, APHIS-WS has determined the need to expand the ORV program to include the states of Tennessee and Kentucky to effectively stop the westward spread of raccoon rabies. The purpose of this new Decision/FONSI is to facilitate planning, interagency coordination, and the streamlining of program management; and to clearly communicate with the public the analysis of individual and cumulative impacts of an expanded APHIS-WS ORV program.

The states where APHIS-WS involvement would be continued or expanded include: Tennessee, New York, Ohio, Texas, Vermont, Florida, Virginia and West Virginia. A small portion of northwestern New Hampshire and the western counties in Pennsylvania that border Ohio would also be included in these control efforts. APHIS-WS would also continue to cooperate in smaller scale ORV projects in the states of Alabama, Massachusetts, Maryland, and New Jersey, as well as enhanced raccoon rabies surveillance in Alabama. In addition, WS may expand cooperative rabies surveillance activities to include areas in eastern Kentucky that border Virginia and West Virginia and could, based upon surveillance information, implement an ORV project in Kentucky. The program's primary goals are to stop the spread of specific raccoon (eastern states), gray fox (Texas) and coyote (Texas) rabies variants to new areas. The EA analyzed the proposed action and a number of alternatives with respect to a number of environmental and other issues raised by involved cooperating agencies and the public. Analysis of those areas not included in the EA are being presented in this Decision/FONSI and have been incorporated into the decision making process.

Based on the analysis in the EA and this Decision/FONSI, I have determined that there will not be a significant impact, individually or cumulatively, on the quality of the human environment as a result of the proposed action.

Affected Environment

The ORV program would continue to be implemented as described in section 1.2 of the EA with program activities being expanded to include the states of Tennessee and Kentucky. Tennessee and Kentucky would participate in and assist in the ORV program to stop the westward spread of raccoon rabies. As described in section 4.1.2.2 of the EA the estimated cumulative size (over all involved states) of the proposed raccoon rabies ORV barrier zones to be treated with ORV baits purchased with USDA funds in any one year would be about 102,650 sq km (or about 39,623 square miles). The proposed area of the ORV program in Tennessee and Kentucky would be within this estimated cumulative size.

In Tennessee and Kentucky, the potential areas involved are extensive and may cover several land ownership types and diverse land uses, including: cultivated agricultural lands, forests, meadows, wetlands, rangelands and pastures representing diverse wildlife habitats. As described by Ricketts et al. (1999) Tennessee and Kentucky are comprised of a Temperate Broadleaf and Mixed Forests habitat type. Appendix E of the EA shows the "ecoregions" (i.e., broad level ecosystems) that occur in the potentially affected states (Bailey 1995). Tennessee and Kentucky are considered to be part of the Eastern Broadleaf Forest (Oceanic) Province - 22, the Eastern Broadleaf Forest (Continental) Province - 222, the Central Appalachian Broadleaf Forest - Coniferous Forest - Meadow Province - M221, and the Lower Mississippi Riverine Forest Province - 234 ecoregions. Furthermore, parts of southwestern Tennessee are considered to be part of the Southern Mixed Forest Province - 231 ecoregion.

Aerial distribution of ORV baits would avoid urban and suburban areas that support high human population densities, as well as lakes and rivers. Aerial distribution of baits would primarily target rural areas as well as known areas of

habitat suitable for the target species. When aerial distribution by fixed-wing or helicopter aircraft is not practical, baits would be distributed by careful hand placement to help to minimize contact by humans, pets and other domestic animals.

Figure 1 shows the states where APHIS-WS would continue or expand assistance to and participation in ORV programs under the proposed action. Figure 2 shows the approximate ORV raccoon bait drop areas anticipated for 2002 and beyond. It must be kept in mind, however, that ORV baiting activities might be needed, and might therefore be conducted, in other areas within the involved states as part of the proposed action. The ORV bait drop areas are also the primary expected areas where assistance by APHIS-WS is expected to be requested to collect blood, tooth and other biological samples from target animals for monitoring and surveillance. However, monitoring or surveillance activities by APHIS-WS could also occur anywhere in the respective states where state health or other appropriate agency officials determine there is a need to insure project effectiveness. Implementation of contingency plans that involve localized population suppression of target species could similarly be needed anywhere in the involved states where outbreaks of the targeted rabies strains occurs.

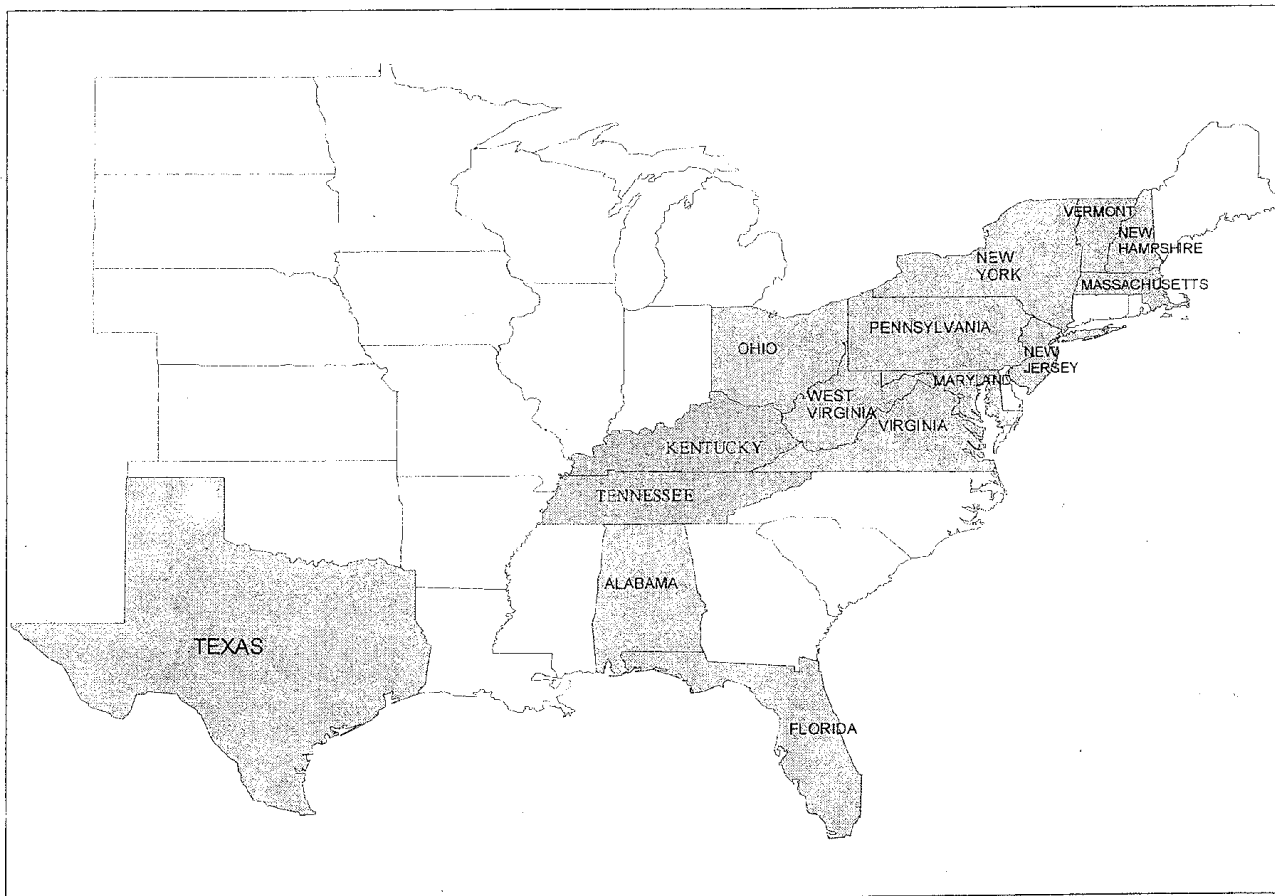


Figure 1. States in which APHIS-WS is proposing to continue or expand assistance to and participation in oral rabies vaccination programs.

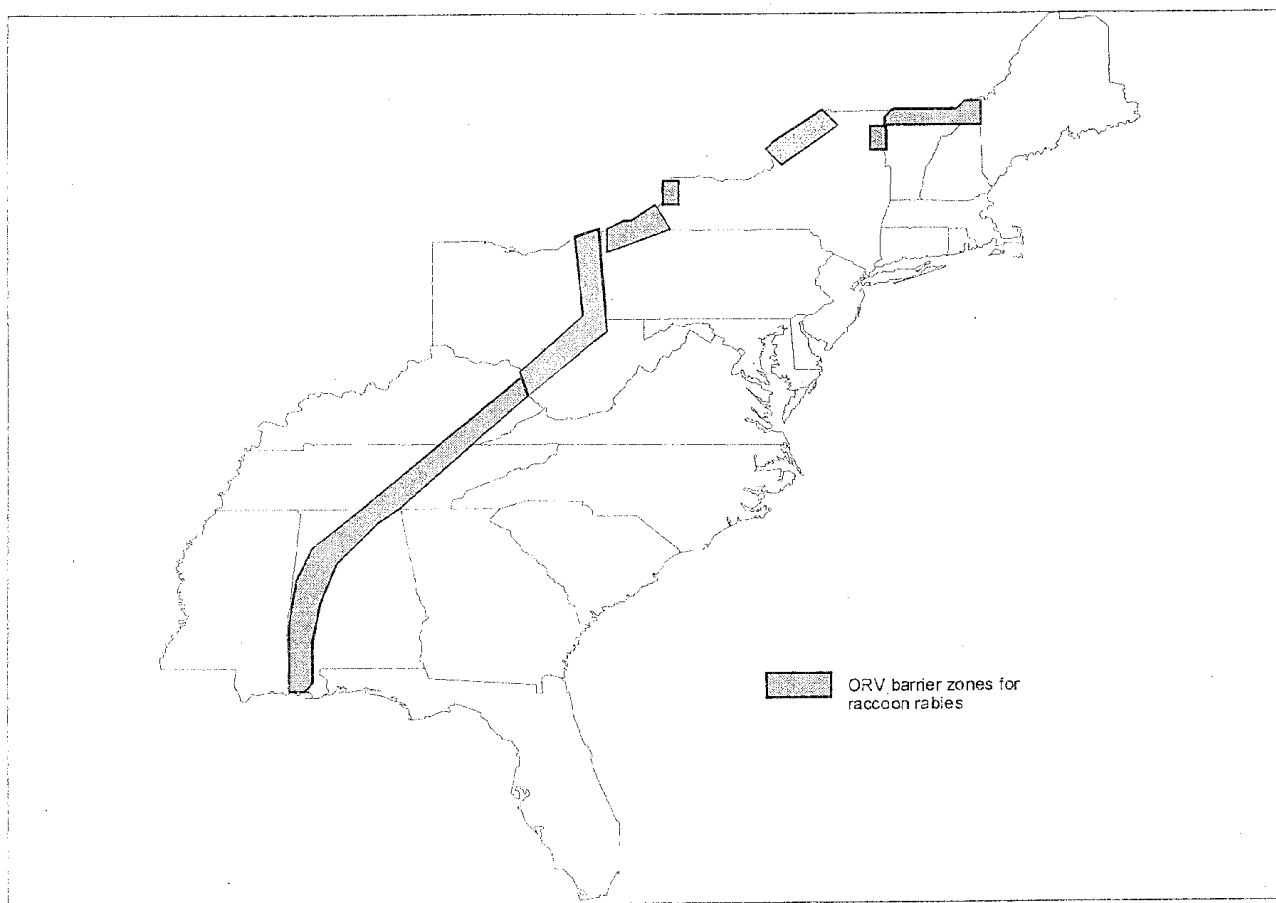


Figure 2. Example of anticipated oral rabies vaccination barrier zones where APHIS-WS would continue or expand participation in and assistance to ORV programs to stop the westward spread of raccoon rabies. ORV baits would be distributed in these and perhaps other zones under the proposed action to vaccinate wild raccoons and form barriers to further spread of the disease.

Table 1 shows some descriptive statistics for the states proposed for federal assistance by APHIS-WS in ORV programs including the states of Tennessee and Kentucky. The states contain about 45% of the U.S. resident population and have average (on a statewide basis) population densities that range from about 64 to nearly 1,100 per sq mile. The percentage of total area that is rural (i.e., nondeveloped) in each state ranges from about 62% in New Jersey to more than 90% in Texas. Population densities in rural areas are much lower than the statewide average figures shown. The percentage of federal land in each state ranges from 0.6 to nearly 13% and averages 3% of the total area of the affected states.

Table 1. Some descriptive statistics of states proposed for federal assistance by APHIS-WS in oral rabies vaccination programs (data from USDC 1999).

State	Resident population (1000s)	Population per sq mile	% of popn. in nonmetro-politan areas 1996	Popn. of nonmetro-politan areas 1996 (1000s)	Total area (1000 acres)	Developed area (1000 acres)	Rural area (1000 acres)	% rural area	Land in farms (1000 acres) 1997	% area in farms	National Forest Land (1000 acres)	Total area owned by federal govt. (1000 acres)	% area in federal govt. ownership
AL	4,352	85.8	32.3%	1,406	32,678	2,000	29,100	89.1%	8,700	26.6%	665.0	1,080	3.3%
FL	14,916	276.2	7.1%	1,059	34,721	4,600	25,800	74.3%	10,500	30.2%	1,147.0	2,645	7.6%
KY	3,936	99.1	51.1%	2,010	25,512	1,700	22,300	87.4%	13,300	52.1%	693.0	1,083	4.2%
MD	5,135	525.3	7.2%	370	6,319	1,100	4,900	77.5%	2,200	34.8%	0.0	157	2.5%
MA	6,147	784.3	3.9%	240	5,075	1,300	3,500	69.5%	500	9.9%	0.0	52	1.0%
NH	1,185	132.1	40.2%	476	5,769	600	4,400	76.3%	400	6.9%	725.0	734	12.7%
NJ	8,115	1,093.8	0	0	4,813	1,600	3,000	62.3%	800	16.6%	0.0	102	2.1%
NY	18,175	384.9	8.2%	1,490	30,681	3,000	26,800	87.4%	7,300	23.8%	0.0	197	0.6%
OH	11,209	273.7	18.9%	2,119	26,222	3,600	22,100	84.3%	14,100	53.8%	227.0	280	1.1%
PA	12,001	267.8	15.4%	1,848	28,804	3,400	24,400	84.7%	7,200	25.0%	513.0	623	2.2%
TN	5,431	131.7	32.0%	1,702	26,728	2,200	22,600	84.6%	11,100	41.5%	634.0	1,576	5.9%
VT	591	63.9	72.3%	427	5,937	300	5,200	87.6%	1,300	21.9%	366.0	377	6.4%
VA	6,791	171.5	22.1%	1,501	25,496	2,200	20,600	80.8%	8,200	32.2%	1,657.0	2,279	8.9%
WV	1,811	75.2	58.2%	1,054	15,411	700	13,400	87.0%	3,500	22.7%	1,033.0	1,077	7.0%
TX	19,760	75.4	15.3%	3,122	168,218	8,200	155,500	92.4%	131,300	78.1%	755.0	2,008	1.2%
Total	119,555	296.0	15.7%	18,824	442,344	36,500	383,600	86.7%	220,400	49.8%	8,415.0	14,270	3.2%
US	270,299	76.4	20.1%	54,330	2,271,343	92,400	1,390,800	61.2%	931,800	41.0%	191,785	563,081	24.8%

A number of American Indian Tribes are located in the states that would be involved in the proposed action and are listed in Appendix F of the EA. Currently, there are no federally or state recognized American Indian Tribes in Tennessee or Kentucky. State agencies that conduct ORV programs involving the use of APHIS-WS funds or assistance would be responsible for obtaining agreements as appropriate from Tribes.

Effects on Federally listed Threatened and Endangered (T&E) species.

New York, Ohio, Vermont, West Virginia, Texas, Florida, Massachusetts, Maryland, New Hampshire, New Jersey, Pennsylvania, Virginia, Alabama. The T&E species list and analysis provided in the EA has not changed and remains valid for these states.

Impacts to Federally listed T&E species in TN and KY. APHIS/WS has determined that the proposed action will have no effect on any federally listed T&E species in the state of Tennessee or Kentucky.

Tennessee. The following are the federally listed T&E species for the state of Tennessee:

Mammals: Carolina Northern Flying Squirrel (*Glaucomys sabrinus coloratus*), Gray Bat (*Myotis grisescens*), Indiana Bat (*Myotis sodalis*), Eastern Puma (*Puma concolor cougar*);

Birds: Bald eagle (*Haliaeetus leucocephalus*), Red cockaded woodpecker (*Picoides borealis*), Interior least tern (*Sterna antillarum athalassos*)

Fish: Spotfin Chub (*Cyprinella monacha*), Smoky Madtom (*Noturus baileyi*), Amber Darter (*Percina antesella*), Slender Chub (*Erimystax cahni*), Slackwater Darter (*Etheostoma boschungii*), Blackside dace (*Phoxinus cumberlandensis*), Snail Darter (*Percina tanasi*), Bluemask Darter (*Etheostoma (Doration) sp.*), Duskytail darter (*Etheostoma percnurum*), Boulder Darter (*Etheostoma wapiti*), Spotfin Chub (*Cyprinella monacha*), Conasauga Logperch (*Percina jenkinsi*), Pallid sturgeon (*Scaphirhynchus albus*), Pygmy Madtom (*Noturus stanauli*)

Crustaceans: Nashville Crayfish (*Orconectes shoupi*)

Mollusks: Birdwing PearlyMussel (*Conradilla caelata*), Dromedary Mussel (*Dromus dromas*), Yellow-Blossom (*Epioblasma florentina florentina*), Green-Blossom Pearly Mussel (*Epioblasma torulosa gubernaculum*), Tuberculed-Blossom Pearly Mussel (*Epioblasma torulosa torulosa*), Turgid-Blossom Pearly Mussel (*Epioblasma turgidula*), Tan Riffleshell (*Epioblasma walkeri*), Fine-Rayed Pigtoe (*Fusconaia cuneolus*), Shiny Pigtoe (*Fusconaia cor*), Pink Mucket Pearly Mussel (*Lampsilis abrupta*), Alabama Lamp Pearly Mussel (*Lampsilis virescens*), White Warty-Back Pearly Mussel (*Plethobasus cicatricosus*), Orange-Footed Pearly Mussel (*Plethobasus cooperianus*), Rough Pigtoe Pearly Mussel (*Pleurobema plenum*), Cumberland Monkeyface Pearly Mussel (*Quadrula intermedia*), Appalachian Monkeyface Pearly Mussel (*Quadrula sparsa*), Pale Lilliput Pearly Mussel (*Toxolasma cylindrella*), Cumberland Bean Pearly Mussel (*Villosa trabalis*), Fine-Lined Pocketbook (*Lampsilis altilis*), Purple Bean (*Villosa perpurpurea*), Cumberland Elktote (*Alasmidonta atropurpurea*), Southern Acornshell (*Epioblasma othcaloogensis*), Purple Cat's Paw Pearly Mussel (*Epioblasma obliquata obliquata*), Clubshell (*Pleurobema clava*), Southern Clubshell (*Pleurobema decisum*), Southern Pigtoe (*Pleurobema geogianum*), Cumberland Pigtoe (*Pleurobema gibberum*), Ovate Clubshell (*Pleurobema perovatum*), Upland Combshell (*Epioblasma metasriata*), Appalachian Elktote (*Alasmidonta raveneliana*), Fanshell Mussel (*Cyprogenia stegaria*), Painted Snake Coiled Forest Snail (*Anguispira picta*), Anthony's Riversnail (*Atheurnia anthonyi*), Royal Snail (*Pyrgulopsis ogmorhapha*), Alabama Moccasinshell (*Medionidus acutissimus*), Triangular Kidneyshell (*Ptychobranthus greeni*), Winged Mapleleaf Mussel (*Quadrula fragosa*), Ring pink Mussel (*Obovaria retusa*), Little-Wing Pearly Mussel (*Pegias fabula*), Cracking Pearly Mussel (*Hemistena lata*), Fine-Lined Pocketbook (*Lampsilis altilis*), Oyster Mussel (*Epioblasma capsaeformis*), Cumberlandian Combshell (*Epioblasma brevidens*), Coosa Moccasinshell (*Medionidus parvulus*)

Plants: Cumberland sandwort (*Minuartia cumberlandensis*), Tennessee Purple Coneflower (*Echinacea tennesseensis*), Small Whorled Pogonia (*Isotria medeoloides*), Ruth's Golden Aster (*Pityopsis ruthii*), Green Pitcher-Plant (*Sarracenia oreophila*), Large-Flowered Skullcap (*Scutellaria montana*), Blue Ridge Goldenrod (*Solidago spithamea*)

Arachnids: Spruce-Fir Moss Spider (*Microhexura montivaga*)

Insects: American Burying Beetle (*Nicrophorus americanus*).

Kentucky. The following are the federally listed T&E species for the state of Kentucky:

Mammals: Virginia big-eared bat (*Corynorhinus townsendii virginianus*), Gray bat (*Myotis grisescens*)
Indiana bat (*Myotis sodalis*)

Birds: Bald eagle (*Haliaeetus leucocephalus*), Red cockaded woodpecker (*Picoides borealis*)
Interior least tern (*Sterna antillarum athalassos*)

Reptiles: Copperbelly water snake (*Nerodia erythrogaster neglecta*)

Fish: Relict darter (*Etheostoma chienense*), Duskytail darter (*Etheostoma percnurum*), Palezpme sjomer (*Notropis albizonatus*), Blackside dace (*Phoxinus cumberlandensis*), Pallid sturgeon (*Scaphirhynchus albus*)

Mussels: Cumberland elktote (*Alasmidonta atropurpurea*), Fanshell (*Cyprogenia stegaria*), Cumberlandian combshell (*Epioblasma brevidens*), Oyster mussel (*Epioblasma capsaeformis*), Catspaw (*Epioblasma obliquata obliquata*), Northern riffleshell (*Epioblasma torulosa rangiana*), Pink mucket (*Lampsilis abrupta*)
Ring pink (*Obovaria retusa*), Little-wing pearlymussel (*Pegias fabula*), Orange-foot pimpleback (*Plethobasus cooperianus*), Clubshell (*Pleurobema clava*), Rough pigtoe (*Pleurobema plenum*), Fat pocketbook (*Potamilus capax*), Cumberland bean (*Villosa trabalis*)

Crustaceans: Kentucky cave shrimp (*Palaemonias ganteri*)

Insects: American burying beetle (*Nicrophorus americanus*)

Plants: Price's potato-bean (*Apios priceana*), Braun's rock cress (*Arabis perstellata* var. *perstellata*), Cumberland rosemary (*Conradina verticillata*), Eggert's sunflower (*Helianthus eggertii*), Cumberland sandwort (*Minuartia cumberlandensis*), White-haired goldenrod (*Solidago albopilosa*), Short's goldenrod (*Solidago shortii*), Virginia spiraea (*Spiraea virginiana*), Running buffalo clover (*Trifolium stoloniferum*)

Effects on Tennessee and Kentucky State Listed Threatened, Endangered, and Species of Special Status

State	T&E Protection under State Law
Tennessee	unlawful to take, possess, transport, export or ship any endangered or threatened species without permit; regulations allow provisions for "take" to alleviate damage and to protect human health and safety.
Kentucky	state laws defines "take" for state listed endangered species similar to ESA; state threatened, species of concern and historical biota have no special additional protection

State	Number of State Listed Species by Category						
	Mammals	Birds	Reptiles	Amphibians	Fish	Invertebrates	Plants
Tennessee	14SM	21SM	4SM	10SM	40SM	1SM	
Kentucky	5E, 3T, 6SC	18E, 11T, 16SC, 4HB	3E, 8T, 7SC	2E, 2T, 7SC	28E, 13T, 16SC, 4HB	41E, 45T, 42SC, 20HB	165E, 122T, 67SC, 38HB

SM= Species in need of management; T=State threatened; E=State endangered; SC=Species of concern; HB=Historical Biota

The only species on the Tennessee and Kentucky state T&E or special status lists that might be expected to raise concerns about potential effects from the proposed action are the following:

- **Least weasel** (*Mustela nivalis*). This species is listed as a species of concern in Kentucky. It is conceivable that this species could consume ORV baits intended for raccoons. Although not specifically tested for safety in this species, safety studies on other closely related Mustelid species (skunk, mink, badger, ferret, and otter) (Rupprecht et al. 1992) indicate weasels would not be adversely affected. Also, an indirect beneficial effect would be a reduced risk of the species suffering further declines because of a rabies epizootic. If a least weasel was inadvertently captured in a cage trap set for a raccoon, it would be released unharmed to avoid lethal take and reported to the appropriate state agency to complement their population monitoring data for this state listed species. Therefore, the proposed action should have no significant impact on this species.
- **Eastern spotted skunk** (*Spilogale putorius*). This species is listed as a species of concern in Kentucky. It is conceivable that this species could consume ORV baits intended for raccoons. Safety studies on skunk species (Rupprecht et al. 1992) indicate skunks would not be adversely affected. Also, an indirect beneficial effect would be a reduced risk of the species suffering further declines because of a rabies epizootic. If a spotted skunk was inadvertently captured in a cage trap set for a raccoon, it would be released unharmed to avoid lethal take and reported to the appropriate state agency to complement their population monitoring data for this state listed species. Therefore, the proposed action should have no significant impact on this species.
- **Black bear** (*Ursus americanus*). This species is listed as a species of concern in Kentucky. It is conceivable that this species could consume ORV baits intended for raccoons. Safety studies on black bear (Rupprecht et al. 1992) indicate bears would not be adversely affected. An indirect beneficial effect would be a reduced risk of the species suffering further declines because of a rabies epizootic. Therefore, the proposed action should have no significant impact on this species.

APHIS/WS has determined that the proposed action would have no effect any other state listed threatened species, endangered species, or species of special status in Tennessee and Kentucky.

National Historical Preservation Act of 1966 as amended (16U.S.C. 470); Executive Order on Environmental

Justice; Executive Order on Protection of Children from Environmental Health and Safety Risks.

APHIS-WS ORV program activities in Tennessee and Kentucky would result in similar impacts as those described in section 1.4, 1.6, and 1.7 of the EA.

Public Involvement

Issues related to the proposed action were identified through involvement and planning/scoping meetings with state health departments, other state and local agencies, academic institutions, the Ontario Ministry of Natural Resources, and the CDC. Additional efforts to determine further issues that the public might have with this action were made through a Federal Register Notice soliciting public input (66 FR 13696-13700, March 7, 2001) and by a second Federal Register Notice making the EA available to the public for review and comment prior to an agency decision (66 FR 27489, May 17, 2001). A letter inviting comments and, subsequently, the EA were sent to potentially affected or interested American Indian Tribes to assure their opportunity to be involved in the EA process. Comments received were reviewed to identify any substantive new issues or alternatives not already identified for analysis. Three comment letters were received in response to the March 7, 2001 Federal Register Notice, and one was received in response to the May 17, 2001 FR Notice. All comment letters were supportive of the proposal to use ORV to address wildlife rabies problems. All letters and responses are maintained in the administrative file located at Wildlife Services, APHIS, 59 Chenell Drive, Suite 7, Concord, NH 03301-8548.

The EA and this Decision/FONSI are being made available for public review and comment through a Federal Register Notice and by direct mailing to agencies, organizations, and individuals with probable interest in the proposed program including potentially affected or interested American Indian Tribes. New issues or alternatives raised after publication of public notices will be fully considered to determine whether the EA and its Decision should be revisited and, if appropriate, revised.

Major Issues

Based on considerable experience by cooperating agencies and APHIS-WS in addressing concerns expressed by the public in past ORV programs, the following issues were identified for consideration in detail in the EA:

- Potential for adverse effects on people that become exposed to the vaccine or the baits
- Potential for adverse effects on target wildlife species populations
- Potential for adverse effects on nontarget wildlife species, including threatened or endangered species
- Potential for adverse effects on pet dogs or other domestic animals that might consume the baits
- Potential for the recombined V-RG virus to "revert to virulence" and result in a virus that could cause disease in humans or animals
- Potential for the V-RG virus to recombine with other viruses in the wild to form new viruses that could cause disease in humans or animals
- Potential for aerially dropped baits to strike and injure people or domestic animals
- Cost of the program in comparison to perceived benefits
- Humaneness of methods used to collect wild animal specimens critical for timely program evaluation or to reduce local populations of target species under state contingency plans

In addition to the identified major issues considered in detail, five other issues were considered but not in detail with rationale and further analysis.

Alternatives Analyzed in Detail

Four potential alternatives were developed to address the issues identified above. Three additional alternatives were considered but not analyzed in detail. A detailed discussion of the anticipated effects of the alternatives on each issue considered in detail is described in Chapter 4 of the EA. The following summary provides a brief description of each

alternative and its anticipated impacts.

Alternative 1. Proposed action (this is the preferred alternative). This alternative would involve the continued or expanded use of federal funds by APHIS-WS to purchase V-RG oral vaccine baits and to participate in their distribution under the authorities of the appropriate state agencies in selected areas of the several states listed in section 1.2 of the EA and Tennessee to stop or prevent raccoon, gray fox, and coyote rabies, and to assist with monitoring and surveillance efforts by capturing and releasing or killing target species for purposes of obtaining biological samples. In addition, WS may expand cooperative rabies surveillance activities to include areas in eastern Kentucky that border Virginia and West Virginia and could, based upon surveillance information, implement an ORV distribution project in Kentucky. APHIS-WS assistance could also include participation in implementing state contingency plans that involve target species population reduction or concentrated ORV baiting in localized areas if rabies outbreaks occur beyond the designated ORV vaccination barriers to stop such outbreaks from spreading.

Alternative 2. No action. This would involve no involvement by APHIS-WS in rabies prevention or control in the states identified in section 1.2 of the EA and Tennessee and Kentucky. The "No Action" alternative is a procedural NEPA requirement (40 CFR 1502), is a viable and reasonable alternative that could be selected, and serves as a basis for comparison with the other alternatives. The states could still conduct ORV programs without APHIS-WS assistance.

Alternative 3. Live-capture-vaccinate-release programs. This alternative would involve the live capture of species being targeted (e.g., raccoon, gray fox, coyotes) followed by administration of rabies vaccines by injection and release back into the wild.

Alternative 4. Provide funds to purchase and distribute ORV baits without animal specimen collections or lethal removal of animals under contingency plans. Under this alternative, APHIS-WS would provide resources for and assistance in ORV bait distribution only and would not engage in or provide funds for the collection of wild animal specimens by APHIS-WS for monitoring and project evaluation purposes or for implementation of localized lethal removal actions under state contingency plans. The states could still conduct these activities without APHIS-WS assistance.

Alternatives Considered but Not Analyzed in Detail

Three alternatives were considered but not in detail and are described as follows with rationale:

Depopulation of target species. This alternative would result in the lethal removal of raccoons (in the eastern states listed) and gray foxes and coyotes (in Texas) throughout the zones where outbreaks of the targeted strains of rabies are occurring or are expected to occur. The goal would be to achieve elimination of the rabies strains by severely suppressing populations of the target animal species over broad areas so that the specific strains of rabies could not be transmitted to susceptible members of the same species. This alternative was not considered in detail because it would be impractical to obtain approval from the many hundreds of thousands of landowners on whose properties the lethal control methods would have to be conducted, because of the cost and effort that would be involved, and because it would also undoubtedly be opposed by most members of the public as well.

Population Control Through Birth Control. Under this alternative, APHIS-WS would provide funds or operational assistance to implement one or more methods to control populations of the target species by reducing reproduction. Such methods could involve live capture and surgical sterilization, the use of chemical reproductive inhibitors placed out in baits or delivery devices, or the application of *immunocontraception* strategies (i.e., vaccines that can cause infertility in treated animals). This alternative was not considered in detail because of the extreme expense and difficulty involved, the greater effectiveness of vaccination alternatives, and because no contraceptive agents are currently registered for use.

Employ other types of ORV instead of the genetically engineered V-RG vaccine. Under this alternative, APHIS-WS would provide funds to purchase and use "modified-live-virus" (i.e., "attenuated" or weakened strains that have been shown to have little chance of causing rabies in treated animals) or perhaps "killed-virus" (i.e., "inactivated" virus) oral vaccines instead of the V-RG vaccine in ORV baits. This alternative was not considered in detail because some of the vaccines involved can sometimes cause rabies (e.g., "live" virus vaccines), others would be cost-prohibitive to produce in ORV form (e.g., "killed" virus vaccines), and none are currently licensed or approved for any such use in the U.S.

Environmental Consequences

The following are the anticipated environmental impacts of the expanded ORV program.

Affected states listed in section 1.2 of the EA (NY, OH, VT, WV, TX, FL, MA, MD, NH, NJ, PA, VA, AL). APHIS-WS has reviewed the EA and has determined that the environmental impacts on the quality of the human environment from activities conducted pursuant to the EA will continue to be insignificant, and that no substantive changes in the analysis are necessary at this time.

Tennessee and Kentucky. APHIS-WS has determined that the information and environmental analysis provide in the EA, combined with the additional information and analysis contained in this Decision, is valid and appropriate for determining the potential environmental impacts of expanding the ORV program into Tennessee and Kentucky. Therefore, APHIS-WS has determined that the EA and additional information and analysis in this Decision are adequate to make an informed decision of APHIS-WS potential environmental impacts in Tennessee or Kentucky.

The environmental analysis provided in Chapter 4 of the EA fully encompasses and considers the potential environmental effects of the ORV program activities in Tennessee and Kentucky and is therefore being used to determine the potential effects of the proposed ORV program in these states. The following is a brief summary of potential impacts of the ORV program in Tennessee and Kentucky for each of the major issues analyzed in the EA.

1. *Potential for adverse effects on people that become exposed to the vaccine or the baits.* The EA concluded that the ORV program has a low to no probable adverse risk or effect to humans from exposure to the vaccine or baits. A similar impact is expected for ORV program activities in Tennessee and Kentucky.
2. *Potential for adverse effects on target wildlife species populations.* The EA concluded that the ORV program has a low to no probable adverse risk or impact to target wildlife species. A similar impact is expected for ORV program activities in Tennessee and Kentucky.
3. *Potential for adverse effects on nontarget wildlife species, including threatened or endangered species.* The EA concluded that the ORV program has a very low to no probable adverse risk or effect on nontarget wildlife, and would have no effect on any T&E species. Based on the review of federally listed T&E species in this Decision, the program would similarly have no effect on any listed species in Tennessee and Kentucky.
4. *Potential for adverse effects on pet dogs or other domestic animals that might consume the baits.* The EA concluded that the ORV program had a low risk to adversely affect pet dogs or other domestic animals that might consume ORV treated baits. A similar impact is expected for ORV program activities in Tennessee and Kentucky.
5. *Potential for the recombined V-RG virus to "revert to virulence" and result in a virus that could cause disease in humans or animals.* The EA concluded that the ORV program had a very low risk to cause disease in humans and animals. A similar impact is expected for ORV program activities in Tennessee and Kentucky.
6. *Potential for the V-RG virus to recombine with other viruses in the wild to form new viruses that could cause disease in humans or animals.* The EA concluded that the ORV program had a very low risk to form new viruses that could cause disease in humans or animals. A similar impact is expected for ORV program activities in Tennessee and Kentucky.
7. *Potential for aerially dropped baits to strike and injure people or domestic animals.* The EA concluded that the ORV program had a very low risk of injury to people or domestic animals from being struck by aerially dropped baits. A similar impact is expected for ORV program activities in Tennessee and Kentucky.
8. *Cost of the program in comparison to perceived benefits.* The EA concluded that the expected benefits of the ORV program will exceed the costs of the program. A similar impact is expected for

ORV program activities in Tennessee and Kentucky.

9. *Humaneness of methods used to collect wild animal specimens critical for timely program evaluation or to reduce local populations of target species under state contingency plans.* The EA concluded that capture and handling methods would be viewed by some persons as inhumane, but many animals would be saved from suffering and death due to rabies. A similar impact is expected for ORV program activities in Tennessee and Kentucky.

Based upon the analysis provided in the EA, APHIS-WS has determined that environmental impacts on the quality of the human environment from expanding the ORV program to include the states of Tennessee and Kentucky will be insignificant.

Cumulative Impacts

No significant cumulative environmental impacts are expected from any alternative, with the possible exception of Alternative 2 - No Action, which might lead to increased human exposures and domestic and wild animal rabies cases across much of the U.S. Although some persons will likely remain opposed to the use of genetically engineered vaccines or the use of the vaccinia pox virus as a component of the ORV, and some will remain opposed to the lethal removal of raccoons, gray fox, or coyotes for monitoring purposes or for implementation of contingency rabies management plans, the analysis in the EA indicates that ORV use and such lethal removals will not result in significant risk of cumulative adverse impacts on the quality of the human environment.

Finding of No Significant Impact

The analysis in the EA indicates that there will not be a significant impact, individually or cumulatively, on the quality of the human environment as a result of implementing the proposed action. I agree with this conclusion and therefore find that an EIS need not be prepared. This determination is based on the following factors:

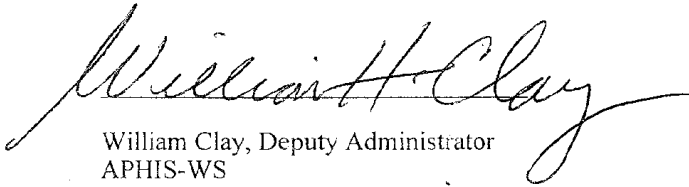
1. The effects of ORV program activities to be conducted by APHIS-WS will be confined to localized areas and are not regional or national in scope.
2. The proposed action would pose minimal risk to public health and safety. No injuries to any member of the public are known to have resulted from ORV programs and adverse health effects from vaccinia associated with ORV have been minimal with no significant long-term effects expected. Positive health benefits to the public would occur through decreased risk of exposure to rabid animals.
3. There are no unique characteristics such as park lands, prime farm lands, wetlands, wild and scenic areas, or ecologically critical areas that would be significantly affected.
4. The effects on the quality of the human environment are not highly controversial. Although there is some opposition to certain methods used to collect animal specimens for monitoring purposes, their use under the proposed action is not highly controversial in terms of size, nature, or effect.
5. Based on the analysis documented in the EA, the effects of the proposed involvement by APHIS-WS in ORV programs on the human environment would not be significant. The effects of the proposed activities are not highly uncertain and do not involve unique or unknown risks.
6. The proposed action would not establish a precedent for any future action with significant effects.
7. No significant cumulative effects on the quality of the human environment were identified through this assessment.
8. The proposed activities would not affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places, nor would they likely cause any loss or destruction of significant scientific, cultural, or historical resources.
9. An evaluation of the proposed action and its effects on T&E species determined that no significant adverse effects would occur to such species, nor would there be any impact on critical habitat for any listed species.
10. The proposed action would be in compliance with all Federal, State, and local laws imposed for the

protection of the environment.

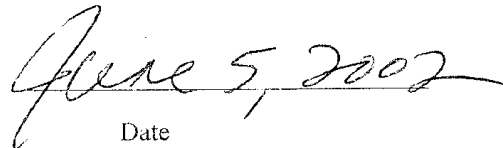
Decision

I have carefully reviewed the EA, input resulting from the public involvement process, and this Decision/FONSI. I believe the issues and objectives identified in the EA would be best addressed through implementation of Alternative 1 (the Proposed Action). Alternative 1 is therefore selected because it offers the greatest flexibility in achieving effectiveness while minimizing cumulative adverse impacts on the quality of the human environment with respect to the issues raised for consideration in this process. The APHIS-WS program will implement the proposed action in compliance with all applicable mitigation measures listed as components of standard operating procedures in Chapter 3 of the EA. This Decision/FONSI will take effect 30 days after publication of a Federal Register Notice making the EA and this Decision/FONSI available to the public for review and comment. New issues or alternatives raised after publication of public notices will be fully considered to determine whether the EA and its Decision should be revisited and, if appropriate, revised, or if a Notice of Intent to prepare an EIS should be issued.

For additional information regarding this decision, please contact Dennis Slate, Rabies Program Coordinator, Wildlife Services, APHIS, 59 Chenell Drive, Suite 7, Concord, NH 03301-8548; phone (603) 223-6832.



William Clay, Deputy Administrator
APHIS-WS



Date

Literature Cited:

- Bailey, R.G. 1995. Description of the ecoregions of the United States. (1st ed. 1980). Misc. Publ. No. 1391 (rev.) Washington, DC: USDA Forest Service. 108 pp.
- Ricketts, T.H., E. Dinerstein, D.M. Olson, C.J. Loucks, W. Eichbaum, D. DellaSala, K. Kavanagh, P. Hedao, P.T. Hurley, K.M. Carney, R. Abell, and S. Walters. 1999. Terrestrial ecoregions of North America: A conservation assessment. World Wildl. Fund - U.S. and Canada. Island Press. Washington, DC. 485 pp.
- Rupprecht, C.E., C.A. Hanlon, H. Koprowski, and A.N. Hamir. 1992a. Oral wildlife rabies vaccination: development of a recombinant virus vaccine. Trans. 57th N. A. Wildl. & Nat. Res. Conf. 439-452.